



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G06F 1/00		A1	(11) International Publication Number: WO 99/59049
			(43) International Publication Date: 18 November 1999 (18.11.99)
(21) International Application Number: PCT/GB99/01431 (22) International Filing Date: 7 May 1999 (07.05.99) (30) Priority Data: 9809885.8 9 May 1998 (09.05.98) GB (71) Applicant (for all designated States except US): VIRCON LIMITED [GB/GB]; Level 2, Saltire Court, 20 Castle Terrace, Edinburgh, EH1 2ET (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): ROBB, David, Shepherd, Stewart [GB/GB]; 22 Lumsden Park, Cupar, Fife KY15 5YL (GB). LEITCH, Victor, Andrew [GB/GB]; Lusta, Carslogie Road, Cupar, Fife KY15 4HY (GB). BAILIE, Richard, Samuel [GB/GB]; 28 Ferryfield, Cupar, Fife KY15 5DG (GB). (74) Agents: McCALLUM, William, Potter et al.; Cruikshank & Fairweather, 19 Royal Exchange Square, Glasgow G1 3AE (GB).		(81) Designated States: AU, CA, GB, JP, SG, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	
(54) Title: PROTECTED STORAGE DEVICE FOR COMPUTER SYSTEM			
(57) Abstract			
<p>The invention is a storage device (1) for a host computer system. The device (1) incorporates a Supervisor function for controlling access to information stored in a storage medium (2) of the device. The main embodiment described is a hard disk drive (1) comprising: one or more disk platters (2) for storing information; a ROM (4) for storing firmware for controlling operation of the drive; a volatile RAM (5); a micro-controller (7) for controlling the transfer of information to and from the disk platter(s) (2); and an interface (6) for interfacing the drive (1) with the host computer system and via which information is transferred to and from the disk platter(s) (2) under the control of the micro-controller (7). A Supervisor is provided in the form of firmware which is preferably stored in the ROM (4), the Supervisor operating the micro-controller (7) so as to protect information stored on the disk platter(s).</p>			
<pre> graph TD A[Computer system requests disk boot sector from boot partition to execute] --> B[Supervisor Firmware intercepts request and returns Loader means in place of disk boot sector (Computer system unaware of the change)] B --> C[Computer system executes Loader means] C --> D[Loader means transfers Code Segment from Storage Device into Computer System RAM and executes this segment] D --> E[Code Segment encounters, and establishes communication with the Supervisor Firmware and then displays the Hardwall banner screen] E --> F{User Selects desired mode} F -- Unprotected --> G[Code Segment prompts for password, transferring the password to the Supervisor Firmware for validation, a retry permitted if incorrectly entered] G --> H[Option to change password If user requests change, the Code Segment prompts for a new password to be entered twice, the passwords being transferred to the Supervisor Firmware for comparison and storage] H --> I[Supervisor Firmware enters UNPROTECTED MODE] F -- Protected --> J[Code Segment requests a list of dormant partitions from the Supervisor Firmware and displays them on computer system screen] J --> K[User selects partition from list] K --> L[Code Segment informs Supervisor Firmware of choice] L --> M[Supervisor Firmware enters PROTECTED MODE] I --> N[Original disk boot sector transferred from storage within the Storage device to computer system RAM and executed by the Code Segment] M --> N N --> O[Disk Boot Sector initiates Operating System] </pre>			